

Aligning the University of the District of Columbia's program offerings with data on the local job market

Isabel Callaway, Andrew Langan, and Brian Gill

In Fall 2023, the District of Columbia's (DC) Office of the Deputy Mayor for Education launched the Education Through Employment (ETE) data project. To facilitate this project, the [Office of Education Through Employment Pathways](#) (ETEP) was created to “support District residents on the path to access good jobs and achieve economic mobility and supporting employers in the development of a local talent pipeline.”

As part of the initiative, ETEP is exploring the relationship between local postsecondary programs and workforce opportunities. For example, the ETE Policy Board is voting on [a proposed research agenda](#) for the ETE data system that includes several relevant research questions, such as: Which postsecondary degree-granting programs and workforce training programs are most associated with full-time employment among graduates, highest salaries among graduates, and economic mobility and wealth attainment among graduates?

To support and guide future research, the ETEP requested that the Mid-Atlantic Regional Educational Laboratory (REL) review labor trends, including job growth and wage levels, in DC and compared them to the University of the District of Columbia's (UDC) program offerings. This analysis aims to determine if local postsecondary programs align with labor market demand. Specifically, this memo explores two questions:

1. Which UDC degree programs are associated with high-opportunity occupations in the DC area?
2. Which DC-area high-opportunity occupations are associated with degrees not offered by UDC?

High-opportunity occupations were identified by calculating the number of expected jobs associated with occupations and degrees. We report this in two ways: the number of expected annual openings (which incorporates both turnover and net growth) and the expected net growth of the number of jobs over ten years. We describe an occupation as high-opportunity if its projections put it among those with the largest number of openings and/or net growth. To avoid setting an arbitrary threshold, we do not require a minimum salary in our definition of high opportunity. Instead, we provide median salary data associated with each occupation with which readers (including ETEP staff) can make their own judgments about salary adequacy.

Background

UDC, a historically Black university, is the only public institute of higher learning in DC and enrolls more graduates from DC public high schools than any other university. UDC is a four-year college that offers a range of degrees, including certificates and associate, bachelor's, master's, and professional degrees across over 80 academic programs. In 2023, UDC had an enrollment of 3,855 students. Most of these students are enrolled in the community college (1,850 students, largely pursuing associate degrees)

or the flagship undergraduate college (1,749 students, largely pursuing bachelor's degrees), with 60 percent attending part time.¹ Total enrollment has declined from 4,456 students in 2019.² Reported graduation rates, particularly from the associate degree program, are low, but these rates may be misleading because UDC students have high rates of transferring, both into and out of the university; substantial numbers of students who graduate from UDC are not counted in official rates because they started school somewhere other than UDC.

UDC primarily serves students who come from low-income families, with a median family income of \$37,500—very low compared to most institutions of higher education.³ During the 2021-22 academic year, 97 percent of students received some form of grant aid and 37 percent of students received a Pell Grant.⁴ Therefore, there is a significant opportunity for the university to act as an engine of social mobility for its students. The New York Times and Opportunity Insights' [Mobility Report Cards](#) show evidence of UDC's impact on its students' social mobility. By age 34, 31 percent of former UDC students (regardless of whether they graduated) have moved up in the income distribution by two or more quintiles relative to the income of their parents. This rate of upward mobility that is in the top five percent of colleges nationally but is attributable partly to the fact that UDC has many students who come from families in the lower quintiles of the distribution.⁵

Even so, the median income of former UDC students at age 34 barely exceeds \$30,000.⁶ This low figure is due in part to the fact that substantial numbers of UDC students do not graduate, especially in the associate degree programs.⁷ Moreover, the recent declines in UDC enrollments limits its opportunity for impact.

To bolster social mobility, UDC must ensure that its degree programs align with local job opportunities. This alignment is a key step in building a strong education-to-employment pipeline and enhancing the potential for social mobility among the DC community.

An additional key step involves getting students to graduation. All the high-opportunity occupations reported in the data below involve professionals who have completed their relevant degree programs.

Terminology guide

Education level: Certificate or Associate, Bachelor's, Master's, and PhD or professional degrees.

Major: Subject area of UDC degree programs (e.g., computer science).

Degree program: Specific UDC program within an education level and major (e.g., bachelor's degree in computer science).

Degree field: Specific program within bachelor's degree listed on the Census's American Community Survey (ACS) (e.g., computer information management and security).

Occupation: Specific occupation included in Bureau of Labor Statistics (BLS) and ACS data (e.g., information security analyst).

¹ Fall 2023 Fact Sheet: https://docs.udc.edu/irap/factsheet_fall2023.pdf

² UDC Factbook 2021-22: <https://docs.udc.edu/irap/UDC-Factbook-2022-v2-Electronic.pdf>

³ Opportunity Insights, <https://www.nytimes.com/interactive/projects/college-mobility/university-of-the-district-of-columbia>

⁴ University of the District of Columbia 2021-2022 Factbook: <https://docs.udc.edu/irap/UDC-Factbook-2022-v2-Electronic.pdf>

⁵ For any particular university, the percentage of its students who might move up by two or more quintiles is constrained by the percentage who start in the bottom three quintiles. Because UDC enrolls a substantial number of students who start in the lower quintiles, a higher proportion of its students could in principle move up by two quintiles or more. Opportunity Insights, <https://www.nytimes.com/interactive/projects/college-mobility>

⁶ Opportunity Insights, <https://www.nytimes.com/interactive/projects/college-mobility/university-of-the-district-of-columbia>

⁷ UDC reports that most of its students do not graduate within 3 years for an associate degree or within 6 years for a bachelor's degree. <https://docs.udc.edu/irap/Graduation-Rates-24.pdf>

Findings

Next, we report the key findings on the two research questions. Methods and data are described in the Appendix, along with additional tables of relevant results. Producing estimates of future job openings associated with specific degree programs requires a large number of assumptions; these results should therefore be viewed as a first, exploratory step toward considering possible changes to UDC programs.

Question 1: Which UDC degree programs are associated with high-opportunity jobs in the DC area?

We found that UDC offers degree programs in each education level that are associated with many projected open positions. Exhibit 1 shows the UDC degree programs by education level that are associated with the highest annual projected job openings. The exhibit also includes the projected net job growth over 10 years in the DC area and the median earnings in the DC area for working individuals with this education level and major.⁸ Opportunities are likely to be especially good in jobs that have both a large number of open positions and substantial net growth, because net growth implies an increase in the number of jobs potentially available for each prospective applicant.

We report estimated median salaries associated with each UDC degree program. For context, the median annual salary in the DC area is \$65,110.⁹ Educational attainment impacts median earnings in the DC area; median earnings for people over 25 with a college or associate degree is \$52,649, with a bachelor's degree is \$85,145, and with a graduate or professional degree is \$110,657.¹⁰ Note that the available data on median earnings are not for starting salaries in entry-level positions, but rather include jobholders at all phases of their careers; they therefore provide information on likely long-term annual earnings rather than salaries that would be offered to new degree holders.

Across education levels, business-related, computer science, biology, and nursing degrees are associated with high numbers of openings, and often with substantial net job growth as well, as Exhibit 1 shows. At the associate level, law enforcement and corrections administration also show substantial numbers of annual openings and positive net growth; bachelor's degree holders in administration of justice likewise can expect to see many job openings and positive net growth. At the master's level, teaching and adult education have many projected openings and positive net growth. And the prospects for law-school graduates look comparatively strong in the DC area, with high median salaries and a large and growing number of positions expected to be available.

As might be expected, higher degree levels are associated with higher earnings. Among the programs with the most expected job openings, earnings for the highest-paying associate degree (in computer science) are similar to those in the lowest-paying bachelor's degree (in biology). All the degree programs with expected median salaries above \$100,000 (among those with the most expected job openings) are at the graduate level. But even at the associate level, the median expected earnings for every one of the programs with the most projected job openings exceeds the \$30,000 median income of former UDC students reported by Opportunity Insights, suggesting the importance of completing a degree.

Separately, we include a spreadsheet that shows projected annual job openings, 10-year-net growth, and median earnings associated with 75 of UDC's programs (Table 1).

⁸ The ACS only collects degree field data for bachelor's degrees; in this analysis, we assume that people earn their master's, PhD, and other professional degrees in the same field as their bachelor's degree. We also assume that within each occupation, certificate and associate degree holders are distributed across degree fields in the same proportions as bachelor's degree holders. See the [appendix](#) for more details about methods and data.

⁹ Bureau of Labor Statistics, https://www.bls.gov/oes/current/oes_47900.htm#00-0000

¹⁰ ACS, <https://data.census.gov/table?t=Educational%20Attainment&g=310XX00US47900>

Exhibit 1. UDC programs with the most regional, annual gross job projections by education level

Education level	Major (median annual earnings)	Annual expected job openings	Net growth over 10 yrs
Certificate or associate degree	Business Administration (\$45k)	8,753	4,591
	Construction Management (\$47k)	5,614	2,890
	Corrections Administration (\$49k)	3,221	1,485
	Law Enforcement (\$49k)	2,847	1,289
	Computer Science (\$59k)	2,700	2,358
	Nursing (\$44k)	2,397	1,816
	Natural Science - Bio (\$40k)	2,331	1,437
	Computer Accounting Tech (\$47k)	2,182	1,062
	Fashion Merchandising (\$42k)	2,082	1,037
	Multimedia Journalism (\$41k)	1,285	658
Bachelor's degree	Business Management (\$85k)	6,995	4,003
	Computer Science (\$105k)	3,521	5,077
	Psychology (\$60k)	2,708	1,731
	Accounting (\$86k)	2,200	1,186
	Finance (\$100k)	2,040	1,344
	Nursing (\$76k)	1,879	1,734
	Administration of Justice (\$81k)	1,852	931
	Biology (\$59k)	1,735	1,079
	Digital Media (\$76k)	1,623	919
	Political Science (\$80k)	1,553	903
Master's degree	Computer Science (\$137k)	1,400	2,249
	Biology (\$98k)	939	890
	Electrical Engineering (\$151k)	814	916
	Adult Education (\$78k)	785	600
	Teaching (\$78k)	751	573
	Mechanical Engineering (\$135k)	487	397
	Rehabilitation Counseling (\$74k)	460	454
	Urban Sustainability (\$96k)	247	160
	Civil Engineering (\$138k)	245	190
	Architecture (\$102k)	241	146
Doctoral or professional degree	Law Full-time (\$175k)	2,087	1,706
	Comp Science & Engin (\$135k)	128	184

Sources: DC DOES and BLS Occupational Employment Projection data; BLS Occupational Employment and Wage Statistics survey data; Census ACS data; UDC program data.

Notes: Median annual earnings are rounded to the nearest thousand. This analysis does not include the Master's in Business Administration or the PhD in Urban Leadership and Entrepreneurship degree programs. Due to BLS data constraints, we relied on bachelor's degree fields to link bachelor's, master's, and PhD or professional degrees to job projections. We assumed that there is not a strong link between bachelor's degree fields and the MBA and PhD in Urban Leadership and Entrepreneurship program, because people are likely to pursue a range of subject areas in undergraduate degree programs before pursuing those degrees (see the [Appendix](#) for details).

Question 2: Which DC-area high-opportunity occupations are associated with degrees not offered by UDC?

Exhibit 2 lists the occupations, by education level, with the largest numbers of annual openings that are not directly associated with a UDC degree program, as well as the median associated salary, number of annual openings, and projected 10-year net growth in each occupation. As a shorthand, we describe these jobs as “uncovered” by existing UDC degree programs.¹¹ We show all occupations associated with at least 200 projected annual job openings that we expect—based on the distribution of degrees among members of the occupation—will go to workers with degrees (levels and/or programs) not offered by UDC.¹² Exhibit 2 also shows the unoffered degree program accounting for the largest share of uncovered openings in each occupation, limited to programs that account for at least 10 percent of total employment in the listed occupation. (In some cases, the same degree program may be the largest unoffered over-10 percent program for more than one occupation.)

Separately, we include a spreadsheet that shows projected annual uncovered job openings, 10-year-net uncovered growth, and median earnings for all occupations with at least 40 projected annual uncovered openings (Table 2).

The uncovered occupations in Exhibit 2 may represent opportunities for UDC to expand or introduce degree programs that lead to these roles. However, we do not consider whether other higher education institutions in the DC area may be offering degrees that meet these needs. Additionally, UDC already has programs in some of these uncovered degree fields but at different education levels. For example, UDC offers a bachelor’s degree in accounting and an associate and bachelor’s degree in nursing, all of which are included in Exhibit 1 as programs with substantial numbers of expected job openings. However, Exhibit 2 suggests that a master’s degree in accounting and a master’s degree in nursing—neither of which are offered by UDC—are also associated with high-opportunity, high-pay DC-jobs, and therefore might be especially ripe opportunities for UDC to explore.

It’s also worth noting that our model assumes that the share of job openings across degree programs and occupations is fixed; but in some cases, existing UDC degree programs might cover the available positions. For example, UDC has a master’s program in counseling; our model expects that holders of UDC’s master’s degree in counseling could fill some but not all the available openings for educational, guidance, and career counselors and advisors, because some of the positions are currently held by holders of master’s degrees in psychology. If employers view master’s degrees in counseling as interchangeable with master’s degrees in psychology, however, then UDC’s existing master’s program in counseling could serve more of the open counseling positions.

¹¹ To link UDC degree programs with occupations, we used 2018-2022 data from the U.S. Census Bureau’s ACS on workers’ education levels (e.g., bachelor’s degree), degree fields (e.g., computer science), and occupations (e.g., information security analyst) to determine what types of occupations people tend to have with what type of degree. See the [appendix](#) for more details about methods and data.

¹² The uncovered job projections exclude the open positions in the same occupations that could be filled by someone with a degree from UDC based on the fact that the positions are currently held by people with the same degree.

Exhibit 2. High-opportunity occupations without an associated UDC degree program at the relevant education level

Education level	Degree field	Occupation (median annual earnings)	Annual UDC-uncovered openings	Net uncovered job growth
Certificate or associate degree	Cosmetology Services and Culinary Arts	Chefs and Head Cooks (\$65k)	422	718
Bachelor's degree	Communications	Public Relations Specialists (\$94k)	1,332	1,098
		Public Relations and Fundraising Managers (\$159k)	579	587
	Marketing and Marketing Research	Market Research Analysts and Marketing Specialists (\$80k)	1,502	1,934
		Marketing Managers (\$170k)	512	422
	Transportation Sciences and Technologies	Aircraft Pilots and Flight Engineers (\$176k)	231	77
Master's degree	Accounting	Accountants and Auditors (\$97k)	1,629	806
	Economics	Economists (\$154k)	242	58
	English Language and Literature	Librarians And Media Collections Specialists (\$86k)	288	125
	Nursing	Nurse Practitioners and Nurse Midwives (\$128k)	334	1,469
	Psychology	Mental Health and Substance Abuse Counselors (\$60k)	509	831
		Educational, Guidance, And Career Counselors And Advisors (\$74k)	425	513
Doctoral or professional degree	Biology	Other life scientists (\$110k)	291	428

Sources: DC DOES and BLS Occupational Employment Projection data; BLS Occupational Employment and Wage Statistics survey data; Census ACS data; UDC program data.

Note: Median income is rounded to the nearest thousand. This analysis excludes growth in medical diagnosing and treating professions that require a doctoral or professional degree—in practice this means doctors, surgeons, and several similar occupations—because filling growth in these jobs would require a medical school.

Appendix: Methods and Data

This section outlines the step-by-step process used to analyze the alignment between the UDC degree programs and labor market demands in the DC area. The methodology involves linking degree programs to specific degree fields, occupations, job growth projections, and earnings. This methodology provides a framework for future analyses of the alignment between UDC's degree offerings and labor market demands, while acknowledging certain limitations and assumptions.

We analyzed data from four sources: the DC Department of Employment Services (DC DOES), the Bureau of Labor Statistics (BLS), the American Community Survey (ACS), and UDC.

Table A1. Data sources and descriptions

Source	Dataset	Description
DC Department of Employment Services (DC DOES)	Washington, DC Occupational Employment Projections Data	District-level projections for gross openings and net growth from 2022 to 2032, by occupation. Relevant variables from this data set include occupation titles and codes, typical entry-level education required, number of employees in 2022, projected number of employees in 2032, and projected annual job openings.
U.S. Bureau of Labor Statistics	Occupational Employment and Wage Statistics (OEWS) Survey Data	Employment levels and earnings distributions for wage and salary workers by occupation and geographic region; in this case the Washington-Arlington-Alexandria DC-VA-MD-WV metro area.
	National Occupational Employment Projections Data	National occupational growth projections, equivalent to the District-level projections provided by DC DOES.
U.S. Census Bureau	American Community Survey (ACS) data	National census data from 2018-2022 to provide insights on workers' education levels, bachelor's degree fields, and occupations. Regional census data from 2018-2022 to provide insights on earnings.
UDC	UDC program data	UDC programs by education level (Certificate or Associate, Bachelor's, Master's, PhD or professional degrees) to link between corresponding degree fields or, in some cases, directly to occupations.

Step 1: Link UDC degree programs to occupations.

We used 2018-2022 data from the U.S. Census Bureau's ACS on workers' education levels (e.g., bachelor's degree), degree fields (e.g., computer science), and occupations (e.g., information security analyst) to determine what types of occupations people tend to have with what type of degree.¹³ First, using the ACS data, we calculated the concentration of certificate/associate, bachelor's, master's, and PhD/professional degree holders from each degree field in each occupation.¹⁴ This told us what share of

¹³ We used the following variables from the ACS dataset: EDUC (educational attainment), DEGFIELDD (field of bachelor's degree, detailed version), and OCCSOC (occupation, Standard Occupational Classification). We did not use second bachelor's degree field (DEGFIELDD2).

¹⁴ Because the ACS only records bachelor's degree field, we assumed that graduate-level degrees were in the same field as an individual's bachelor's degree. Degree fields for associate degree holders were imputed based on the

employment in each occupation was filled by individuals from each specific type of degree program. For instance, we found that 16 percent of Accountants and Auditors have a master's degree in accounting.

Then, for each UDC degree program we determined the education level (certificate/associate, bachelor's, master's, or PhD/professional degree) and assigned up to three degree fields using the [Census's list of 184 options](#). We manually assigned one or more ACS degree fields to each UDC degree program based on degree field and online program descriptions.¹⁵ When a UDC degree program description aligned with more than one ACS degree field, we matched it to multiple degree fields; however, no degree program aligned with more than three ACS degree fields.

We then used these fields to merge each UDC degree program to relevant occupations in the ACS data. Specifically, we estimated the share of employees in each occupation that hold a degree with the same education level and degree field.¹⁶ For example, we linked UDC's bachelor's in digital media degree program with the following ACS data:

- Education level: Bachelor's
- Degree field(s): Mass Media, Journalism
- Occupational representation (percent of people in each occupation with a bachelor's degree in either the mass media or journalism degree field—full occupation list omitted):
 - o Public Relations Specialists (11 percent)
 - o Market Research Analysts and Marketing Specialists (5 percent)
 - o News Analysts, Reporters, and Journalists (32 percent)

Step 2: Calculate regional expected job openings and net growth by occupation.

To determine DC-area-wide job openings and occupation growth, we used data on District-level net job growth from 2022 to 2032 and annual job openings at the occupational level from the DC DOES employment projections. We multiplied District-specific growth rates by the number of individuals employed in a given occupation in the entire DC metro area.¹⁷ We used the annual job openings rather

distribution of bachelor's degrees across fields within occupation, using the modeling assumption that associate degrees would be distributed across degree fields in the same proportions as bachelor's degrees. For example, if we saw an occupation where 70 percent of bachelor's degree holders had Chemistry as their degree field and 30 percent of bachelor's degree holders had Biology as their degree field, we would similarly assign 70 percent of the associate degree share of employment to chemistry and 30 percent to biology.

¹⁵ Our reviewer made a judgment about the best code or codes to assign based on program information from UDC Programs & Degrees descriptions at <https://www.udc.edu/programs/>. The matching process did not use any specific rubric. We considered, but opted not to use, the crosswalk between occupations (coded using the Standard Occupation Classification [SOC]) and instructional program (coded using the Classification of Instructional Programs [CIP]) produced by BLS and the National Center for Education Statistics (available at <https://nces.ed.gov/ipeds/cipcode/post3.aspx?y=56>). Although the crosswalk links multiple CIP codes to each SOC code and vice versa, it does not account for the full range of degree programs that may be associated with each occupation or any given degree program's empirical prevalence within the occupation. It also does not account for degree level.

¹⁶ We made exceptions to this approach for three UDC degree programs—the JD program, the Speech and Language Pathology master's degree, and the Mortuary Science Associate degree—which we linked directly to 1-2 specific occupations.

¹⁷ Projections are not available at the MSA level; however national-level projections are available from the Bureau of Labor Statistics. Occupations accounting for 267 detailed occupations (out of 703 in the combined ACS-BLS occupation code structure) accounting for 6 percent of 2022 MSA-wide employment did not have a projection available from DC DOES. For these occupations, we applied the national-level growth rates listed in the BLS projections.

than the net change over time to identify high-opportunity occupations to include in the Exhibits, since annual job openings are more relevant for measuring the number of job opportunities for UDC graduates.

For example, DC DOES projects public relations specialist jobs to increase by 7.29% District-wide between 2022 and 2032; similarly, over the same period the projections anticipate an average of 1,562 annual job openings for public relations specialists relative to total DC employment of 17,650. Currently, in the DC-region, there are 23,020 public relations specialists. We multiplied 23,020 by 7.29% to project how many net new public relation specialist jobs are projected to exist in the DC-region in 2032, and multiplied 23,020 by the ratio of new job openings to total employment (1,562 divided by 17,650) to calculate expected annual job openings.

Step 3: Determine regional expected job openings and net growth for each UDC degree program.

Using the links between occupations and UDC degree program established in step 1 and the regional occupation growth predictions calculated in step 2, we allocated job openings and net growth from each occupation to specific UDC degree programs.

We based the job openings on each degree program's ACS-derived share of employment for each occupation. For example, we allocated 32 percent of news analysts, reporters, and journalists openings, 11 percent of public relations specialists job openings, and 5 percent of market research analysts and marketing specialists openings to UDC's bachelor's in digital media degree program. Adding in the relevant share of DC-area growth from all other occupations yielded the total projected job openings associated with that program.

Because our model allocates job openings to degree programs in this way, not all job openings in the forecast can be allocated to an existing UDC program. For example, many public relation specialist jobs are filled by people with a bachelor's degree in communications. UDC offers a bachelor's degree in digital media which, as described above, is associated with the public relation specialist job openings. However, as shown in Exhibit 2 there are 1,332 additional public relations specialist annual job openings in the DC metro area (and 1,098 net new public relations specialist positions over 10 years) that are projected to be filled by people with degrees that are not offered by UDC, the largest of which (in terms of uncovered growth for this occupation) is the bachelor's degree in communications.

Step 4: Identify median earnings associated with each UDC degree program.

For bachelor's, master's, and PhD/professional degree programs, we reported DC-area median earnings associated with the relevant education level and degree field or fields, using ACS income data. For example, to identify a median annual salary for people pursuing a BA in digital media, we used the DC-area median earnings for people whose highest educational attainment is a bachelor's degree in either the Mass Media or Journalism degree fields. Since ACS only collects degree field data for bachelor's degrees, we assumed that people earn their master's, PhD, and other professional degrees in the same field as their bachelor's degree.

To calculate median earnings for associate degree fields, we used the distribution of associate degree fields in each occupation calculated in Step 1 above. We multiplied these proportions by the ACS person-level survey weights to allocate DC-area associate degree holders to each UDC degree program based on their occupation, and then calculated the median income by program. For example, if our calculation in Step 1 indicated that 35 percent of associate degree holders in the "Childcare workers" occupation have an associate degree in Early Childhood Education, then each childcare worker with an associate's degree

in the ACS data would be included in the calculation of the median income for the Early Childhood Education associate degree program, at 35 percent of their Census survey weight.

Additional limitations and assumptions

1. Many occupations associated with UDC programs in this analysis align with the programs in terms of substantive training and content. However, this link will not be as strong for programs where many graduates find work in unrelated occupations. Three exceptions from the UDC program list are the JD law program, the Speech and Language Pathology master's degree program, and the Mortuary Science associate degree program. These degree programs are linked directly to specific occupations and therefore, all the forecasted job openings from the occupations are allocated to them directly.
2. This analysis excludes growth in medical diagnosing and treating professions that require a doctoral or professional degree—in practice this means doctors, surgeons, and several similar occupations—since filling growth in these jobs would require a medical school.
3. This analysis excludes growth in lower-pay occupations not requiring any education beyond a high school diploma; however, we retain some of the lower-education-requirement occupations with higher earnings potential (specifically, those for which 25th percentile of their annual earnings distribution, listed in the 2022 OES for the DC MSA, exceeds the median of all 25th percentile annual pay values for occupations requiring less than a bachelor's degree according to the BLS national employment projections).
4. Because some UDC programs span the same degree fields at the same education level, the same projected job growth can be allocated to multiple programs. For instance, both the information technology and computer science bachelor's degree programs are linked to the "Computer and Information Sciences" degree field, meaning that job growth related to that degree field at the bachelor's degree level will be linked to both programs.
5. We do not consider second majors listed in the ACS data (variable name DEGFIELDD2). This allows us to match each worker to a single degree program before partitioning the observations across programs within occupation. Eleven percent of individuals listing a first major also include a second major.
6. The analysis does not include non-credit UDC programs, because we were unable to confidently link them to ACS or BLS data. We also did not analyze the MBA or Urban Leadership and Entrepreneurship graduate programs, given the lack of a clear substantive link to either specific undergraduate fields (used to impute field for other graduate degrees) or specific occupations (used to link the three exceptions mentioned in the first limitation and footnote 9).

This work was funded by the U.S. Department of Education's Institute of Education Sciences (IES) under contract 91990022C0012, with REL Mid-Atlantic, administered by Mathematica. The content of the presentation does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government.